

TRICLOPYR CHEMICAL FACT SHEET

Formulations

Triclopyr was initially registered with the U.S. EPA in 1979, reregistered in 1997, and is currently under registration review. An interim registration review decision was released in 2020. There are two forms of triclopyr used commercially as herbicides: triethylamine salt (TEA) and butoxyethyl ester (BEE). TEA is the formulation registered for use in aquatic systems. BEE formulations are solely intended for terrestrial use and are highly toxic to aquatic life. The use of triclopyr-based herbicides in aquatic environments that are not approved for aquatic use is very unsafe and a violation of federal and state pesticide laws. Triclopyr is sold both in liquid and granular forms. It is labeled for control of submerged vegetation using surface or subsurface application and for control of emergent and floating-leaf vegetation using direct foliar application. Commercial formulations approved for aquatic use in Wisconsin include Renovate 3[®], Triclopyr 3, Renovate OTF[®] and Trycera[®].*

Aquatic Use and Considerations

Triclopyr is a systemic herbicide (i.e., it moves throughout the plant tissue) that is believed to selectively act on broadleaf (dicot) and woody plants. It is a WSSA Group 4 herbicide, meaning that the mechanism of action is by mimicking the plant growth hormone auxin. Plant growth becomes abnormal and twisted following treatment, and plants decompose within one to two weeks after application. Triclopyr needs to be applied to plants that are actively growing. If there is flowing water at a treated site, higher concentrations or a repeated application may be required.

* Product names are provided solely for your reference and should not be considered exhaustive nor endorsements.

It is important to note that repeated use of herbicides in the same WSSA group (i.e., with the same mechanism of action) can lead to herbicide-resistant plants, even in aquatic environments. In order to reduce the risk of developing resistant genotypes, avoid using the same type of herbicides year after year, and utilize effective integrated pest management strategies as part of any long-term control program.

Triclopyr is labeled to control invasive Eurasian watermilfoil (*Myriophyllum spicatum*), hybrid watermilfoil (*M. spicatum x sibiricum*), non-native Phragmites (*Phragmites australis* subsp. *australis*) and purple loosestrife (*Lythrum salicaria*)[†]. Native species that are also labeled as susceptible to triclopyr include native milfoils (*Myriophyllum* spp.), watershield (*Brasenia schreberi*), pickerelweed (*Pontederia cordata*) and waterlilies (*Nymphaea* spp. and *Nuphar* spp.)[†].

Post-Treatment Water Use Restrictions

There are no post-treatment restrictions on treated water use for swimming, fishing, or livestock drinking water. Triclopyr concentrations must be below 1 part per billion or at least 120 days must pass before treated water can be used for irrigation. Setback distances from potable water intakes may apply depending on area treated and application rate. If triclopyr is applied within the labeled setback distance from a potable water intake, the intake must be turned off until concentrations of triclopyr are less than 0.4 parts per million.[†]

[†] May vary by formulation, application rate, and/or product. Every product label must be carefully read and followed by the user.

Herbicide Degradation, Persistence and Trace Contaminants

Triclopyr is broken down rapidly by light (photolysis) and microbes and has a half-life (the time it takes for half of the active ingredient to degrade) ranging from 12 hours to 12 days under aerobic conditions. Triclopyr degradation is slowed under anaerobic conditions, with a reported half-life of about three and a half years. The major mechanism for the removal of triclopyr from the aquatic environment is thought to be microbial degradation, although the role of photolysis likely remains important in near-surface and shallow waters. Additionally, degradation by microbes slows in the absence of light. Lakes with more organic matter in sediments will have more rapid degradation.

The initial breakdown products of triclopyr are TCP (3,5,6-trichloro-2-pyridinol) and TMP (3,5,6-trichloro-2-methoxypridine). TCP has a longer half-life than triclopyr (20 to 70 days).

Triclopyr doesn't bind to soil, which means leaching of triclopyr and its degradation products may occur. However, it is likely not mobile enough to contaminate groundwater.

Impacts on Fish and Other Aquatic Organisms

The formulation of triclopyr approved for aquatic use (TEA) is practically non-toxic to freshwater fish, freshwater invertebrates and birds.

The degradation products TCP and TMP are more toxic to aquatic organisms than triclopyr. TCP is slightly toxic to freshwater fish and invertebrates on a short-term basis. TMP is moderately toxic to fish but is found only in low concentrations after treatment if detected at all.

Triclopyr and TCP do not bioaccumulate (the process by which chemicals in the environment or in a food source are taken up by plants or animals) and clear from fish and crayfish tissues at rates similar to rates that triclopyr and TCP clear from water. TMP does appear to bioaccumulate in fatty fish tissues but does not persist in fish for long following TMP

disappearance from the water (half-life of about 5 to 12 days).

Human Health

Chemical applicators are primarily at risk of toxic effects after short-term exposure to triclopyr. Concentrated triclopyr does not pose an inhalation risk but can cause skin irritation and irreversible eye damage. Wear proper personal protective equipment and follow labels while handling.

Triclopyr does not show evidence of birth defects, reproductive toxicity or genetic mutations in mammals after long-term exposure. Triclopyr is not metabolized by humans and is excreted from human bodies mostly intact. Based on its low short-term toxicity to mammals and its rapid disappearance from the water column due to light and microbial degradation, triclopyr is not considered to pose a risk to water users.

For Additional Information

U.S. Environmental Protection Agency (EPA)
Office of Pesticide Programs
epa.gov/pesticides

Wisconsin Department of Agriculture, Trade,
and Consumer Protection
[datcp.wi.gov/Pages/Programs_Services/ACMOv
erview.aspx](http://datcp.wi.gov/Pages/Programs_Services/ACMOv
erview.aspx)

Wisconsin Department of Natural Resources
608-266-2621
dnr.wi.gov/lakes/plants

Wisconsin Department of Health Services
dhs.wisconsin.gov

National Pesticide Information Center
1-800-858-7378
npic.orst.edu

